

The nested variant of urothelial carcinoma arising in a fibroepithelial polyp: Report of a case and review of literature

Nadira Mamoon, Zujajah Hameed, Fazal Ilahi, Imran Nazir Ahmad

Department of Histopathology, Shifa International Hospital, Islamabad

ABSTRACT

The nested variant of urothelial carcinoma is a rare but very important histological entity due to its deceptively bland-looking appearance and aggressive behavior. We present a case of a 30-year-old man who was found to have a solitary polypoid growth in the bladder. It was resected and found to be a fibroepithelial polyp; a rare entity in itself, harboring the above tumor. The lesion also showed a second population of scattered bizarre stromal cells. To our knowledge, this is the first instance of a nested variant of urothelial carcinoma arising in a fibroepithelial polyp. The presence of atypical stromal cells has also not been described previously.

Key words: Fibroepithelial polyp, nested variant, urinary bladder, urothelial carcinoma

INTRODUCTION

The nested variant of urothelial carcinoma is a rare but very important histological entity due to its deceptively bland-looking appearance and aggressive behavior. This variant was first described by Talbert and Young in 1989.^[1] Histologically, it is characterized by small nests and abortive tubules of bland-looking urothelial cells that are seen infiltrating the lamina propria and muscularis propria. The cells usually show minimal atypia, and the carcinoma is frequently confused with certain benign conditions such as von Brunn's nests and cystitis cystica.^[2] The nested variant of urothelial carcinoma is characterized by aggressive behavior despite its bland-looking appearance emphasizing the correct diagnosis of this unusual variant.^[3,4]

CASE REPORT

A 30-year-old male presented with pain in the hypogastric region. X-rays and ultrasound revealed a stone in the bladder. While removing the stone surgically, a sessile polypoidal mass measuring 1.8 cm was seen at the posterosuperior wall of bladder, which was resected and sent for histopathology. On gross examination, it was a reddish-brown sessile polyp measuring 1.8 cm × 1.5 cm × 1.3 cm, which was submitted entirely for histopathological evaluation. Microscopy revealed a polyp covered by unremarkable epithelium [Figures 1 and 2]. The hyalinized vascular stroma was interspersed with many multinucleated bizarre stromal cells [Figure 3]. There

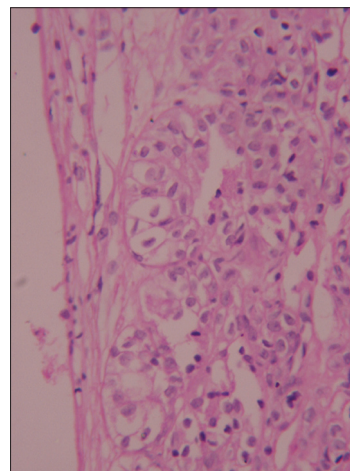


Figure 1: Nested appearance of tumor cells with overlying bladder mucosa (x400).

For correspondence: Dr. Nadira Mamoon, Department of Histopathology, Shifa International Hospital, Islamabad H8/4, Pakistan. E-mail: nmamoon@live.com

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10.4103/0970-1591.124217

were closely packed nests of bland-looking cells extending from the epithelium to the underlying muscularis propria infiltrating in between the smooth muscle and nerve bundles. The cells showed minimal atypia. The base of the polyp showed scattered bizarre stromal cells with occasional nests of the same bland-looking tumor cells.

Special stains including Von Gieson and Masson's trichrome were done, which highlighted the transecting smooth muscle bundles clearly depicting the infiltrating nature of the tumor cells. Immunohistochemistry showed the cells strongly positive for pankeratin (CK AE1/AE3) [Figure 4] and high molecular weight keratin (34BE12), which confirmed their epithelial nature. The cells were also positive for p53 expression [Figure 5] and ki 67 index was high (50% approx.), predicting an aggressive course of the tumor.

DISCUSSION

The nested variant of urothelial carcinoma is rare, and estimated incidence is less than 0.3% of all invasive bladder tumors.^[4] The reported age at the time of diagnosis ranges

from 45 to 97 years.^[4] Microscopically, it is deceptive due to its low grade features including small irregular nests of urothelial cells. The cells show minimal pleomorphism with slightly increased nuclear to cytoplasmic ratio. Our case also showed similar small confluent nests of bland cells infiltrating the stroma. The surface urothelium is usually normal as in our case. Nested variant of urothelial carcinoma has to be differentiated from certain benign lesions including Brunns' nests, cystitis glandularis, and inverted papilloma. The most important feature to recognize is its invasion into the muscularis propria,^[4,5] which was very obvious in our case. p53 which is a tumor-suppressor gene is usually over expressed, which indicates its aggressive behavior.^[5] Ki 67, a proliferation marker, is usually high,^[5,6] whereas it is less than 10% in benign lesions such as inverted papilloma and cystitis glandularis. This may provide a supporting clue while differentiating it from these benign lesions. In our case also, Ki 67 was high (50% approximately).

Our case is unusual in that it arose in a fibroepithelial polyp. Polyps in the urinary bladder are rare and are usually seen

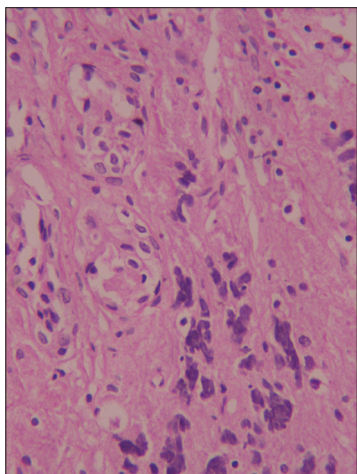


Figure 2: Tumor nests with atypical stromal cells in the background (x400)

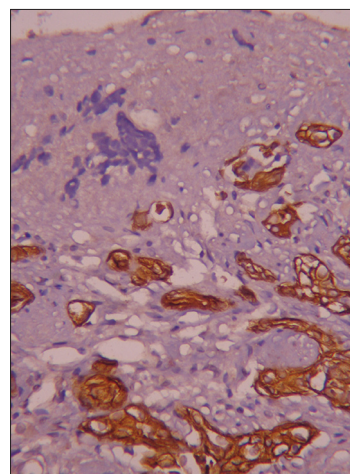


Figure 3: CKAE1AE3 highlighting the nests of tumor cells. Atypical stromal cells are negative. (x400)

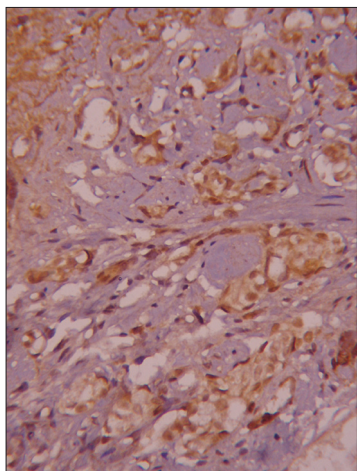


Figure 4: p53 positivity in tumor nests (x400)

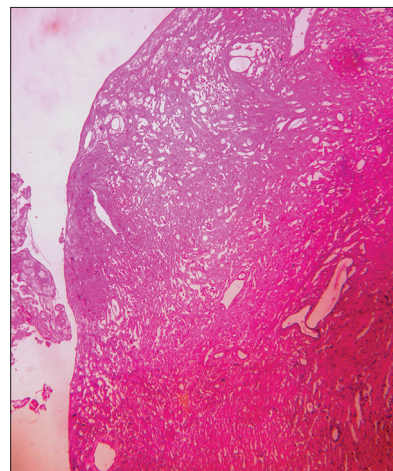


Figure 5: 34Be12 positive in tumor nests (x400)

in children. Occasionally, they have been found in adults documented as case reports in medical literature.^[7] The chances of malignancy in these polyps are minimal. Our case is unique in that a rare malignancy arose in polyp, which itself is a rare lesion of the urinary bladder.

Atypical stromal cells accompanying our tumor were also a very unusual finding. In one case series of fibroepithelial polyps of lower urinary tracts, atypical cells were seen in one out of 12 reported cases.^[7] The atypia is attributed to degenerative changes, and the same phenomenon was also noted by Young.^[7,8] Care should be taken not to confuse this atypia with malignant mesenchymal neoplasms.^[7] The occurrence of a nested variant of urothelial carcinoma in a fibroepithelial polyp which also harbored atypical stromal cells is a very curious and a so far unreported occurrence.

Many authors advocate radical cystectomy for this tumor in the first instance due to its aggressive behavior and propensity to recur.^[9,10]

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How to cite this article: Mamoon N, Hameed Z, Ilahi F, Ahmad IN. The nested variant of urothelial carcinoma arising in a fibroepithelial polyp: Report of a case and review of literature. *Indian J Urol* 2014;30:105-7.

Source of Support: Nil, **Conflict of Interest:** None declared.